

AMSCO EDUCATION SERVICES

IPS FOR IMPROVING YOUR STERILIZING TECHNIQUES

STEAM STERILIZERS

Prepared by the
Education Division and Research Department of
AMSCO/American Sterilizer Company
Eric, Pennsylvania

After Patient Care Through Education

LINENS

3. STAINED

Probable Causes

Corrections

1. DAMP

Probable Causes

Corrections

- Clogged chamber drain strainer.
- Clogged chamber drain line.

Remove strainer; free openings of lint, sediment, etc. Clean chamber drain line. Mix 2 tbsp. trisodium phosphate with one quart of hot water, pour into chamber drain line. Then flush drain with one quart of hot tap water.

- Excessively large or dense packs.
- Placing warm sterilized packs on cold surfaces.

Reduce pack to 12" x 12" x 20" or less, and 12 pounds or less. Allow packs to cool on loading car or surfaces covered with several layers of muslin.

- Sterilized goods removed from sterilizer too soon following completion of cycle.
- Improper loading.

Allow goods to remain in sterilizer an additional 15 minutes with door slightly open.

- Combining utensils and linens in a pack.
- Placing utensils and other hard goods on top shelves of loading car, with linen packs on lower shelves.

Place packs (utensils, gloves, etc.) on edge, arrange supplies to present the least possible resistance to passage of steam and air through layers of load. Wrap linens separately.

Load hard goods below fabrics.

Probable Causes

Corrections

2. WET

Probable Causes

Corrections

3. DIRTY

Probable Causes

Corrections

4. TORN WRAPPERS

Probable Cause

Corrections

5. CORRODED

Probable Causes

Corrections

6. INSTRUMENTS

Probable Causes

Corrections

7. STAINED

Probable Causes

Corrections

8. LINENS

Probable Causes

Corrections

9. INSTRUMENTS

Probable Causes

Corrections

10. STAINED

Probable Causes

Corrections

11. INSTRUMENTS

Probable Causes

Corrections

12. STAINED

Probable Causes

Corrections

13. STAINED

Probable Causes

Corrections

14. STAINED

Probable Causes

Corrections

15. STAINED

Probable Causes

Corrections

16. STAINED

Probable Causes

Corrections

၁၁၁

Probable Causes

Mineral deposits on instruments	Wash with soft water and detergent with good wetting properties.
Laundry compound from laundry wrappers.	Check laundry procedures.
Residual detergent from cleaning solutions.	Rinse instruments thoroughly.
Mineral deposits from water rinse.	Mineral deposits from tap
Deposits or stains from strong dyes or chemicals.	Use distilled water for final rinse.
I. STIFF HINGES OR JOINTS	
Probable Causes	Corrections
Corrosion or soil in joint.	Clean joint with a warm, weak solution (10%) of nitric acid or alapping compound (Grit 180-Clover Mg. Co., Norwalk, Conn.). Rinse instruments thoroughly.
Jaws or shanks out of alignment.	Realignment by qualified instrument repairman.
UTENSILS	
1. WET WRAPPERS ON METALLIC UTENSILS	
Probable Causes	Corrections
Improper loading.	Position load so water does not collect in utensils.
Improper positioning inside wrapper.	Separate utensils (with acceptable dividers) and position them so that the bottoms are parallel.
2. WET (UNWRAPPED) UTENSILS	
Probable Cause	Correction
Improper loading.	Position utensils so that water cannot collect.

STIFF HINGES OR JOINS

4. BROKEN SUCTION BOTTLES	
Probable Causes	Corrections
<ul style="list-style-type: none"> Inrush of cool air when sterilizer door is opened. Soft glass. Chipped or defective bottles. 	<ul style="list-style-type: none"> Wrap before placing in sterilizer. Use heat-resistant glass bottles. Inspect bottles for defects before sterilizing.
SYRINGES	
1. STICKY	
Probable Causes	Corrections
<ul style="list-style-type: none"> Residual detergent or soil. Sterilized while assembled. 	<ul style="list-style-type: none"> Clean and rinse thoroughly with water for final rinse. Separate barrels and plungers.
2. WET WRAPPERS	
Probable Cause	Correction
Overloaded baskets or racks.	Load loosely.
3. EXCESSIVE BREAKAGE	
Probable Causes	Corrections
<ul style="list-style-type: none"> Rough handling. Sterilized while assembled. Poor-quality syringes. Steam erodes glass. 	<ul style="list-style-type: none"> Handle carefully. Separate barrels and plungers. Use good-quality syringes. Sterilize by dry heat.

SYNOPSIS

Probable Causes	Corrections
Excessive exposure to high temperature.	Rinse thoroughly; reduce quantity of detergent in wash cycle. Do not exceed 180°F during drying process. Remove from dryer as soon as gloves are dry. Use 20-minute sterilizing exposure at 250°F; remove from sterilizer on completion of cycle.
Sterilizing gloves with other goods.	Sterilize gloves separately.
Poor powdering.	Follow manufacturer's instructions to insure film of powder on all surfaces.
2. EXCESSIVE TEARING OR RUPTURING	
Probable Causes	Corrections
• Gloves used too soon following sterilization.	Don't use gloves until 24 hours after sterilization.
• Water or air testing too soon after washing and drying.	Air test (only) not less than 8 hours following drying.
3. BRITTLE	
Probable Causes	Corrections
• Overexposure to heat in sterilizer or in storage.	Use 30-minute sterilizing exposure at 250°F; remove from sterilizer on completion of cycle; store in cool area.
• Dry catheter or tubing.	Flush with distilled water just prior to sterilization.
• Prolonged storage before placing in circulation.	Improve inventory control.
• Repeated sterilization without proper cleaning.	Reprocess before sterilizing.
CATHETERS, TUBES, AND TUBING	

2. STICKY

Probable Cause	Correction
• Prolonged exposure to chemicals, grease, oils, etc.	Avoid overexposure.
• Maladjusted slow exhaust valve.	Notify manufacturer.
2. LOSS OF MORE THAN 5% OF FLUID VOLUME DURING STERILIZATION	

SOLUTIONS

4. NO VACUUM

Probable Causes	Corrections
• Exhausting sterilizer too rapidly.	Use slow exhaust cycle.
• Maladjusted slow exhaust valve.	Notify manufacturer.
• Excessive sterilizing temperature.	Sterilize at 250-254°F.
5. DISCOLORATION	
Probable Causes	Corrections
• Prolonged exposure period.	Exposure should be according to size of flasks; do not combine flasks requiring different exposure periods in same load.
• Impure ingredients or dirty flasks.	Check purity of ingredients and clean flasks thoroughly.
• Excessive temperature.	Sterilize only at 250-254°F.
6. SOLUTIONS BOILING WHEN DOOR IS OPENED	
Probable Causes	Corrections
• Door opened too quickly.	Do not open door until temperature gauge is below 212°F and pressure gauge is at "0". Do not touch or move a load of boiling solutions.
• Maladjusted slow exhaust valve.	Notify manufacturer.
7. BLACK PARTICLES OR "SNOWSTORM"	
Probable Causes	Corrections
• Cracked before sterilization; poor inspection following cleaning.	Inspect thoroughly after cleaning; discard chipped or cracked flasks.
• Containers not heat-resistant or with screw-caps.	Use only borosilicate (Type I) containers and automatic sealing and venting closures.

SPORIDI (BACTERIAL SPORE STRIPS)

MECHANICAL

1. VIABILITY CONTROL STRIP SHOWS NO GROWTH

Probable Causes	Corrections
• Excessively low or high incubation temperature.	Inoculate at 55°C for <i>B. stearothermophilus</i> ; 37°C for <i>B. subtilis</i> (<i>globigii</i>).
• Not using correct medium.	Use Trypticase Soy Broth B.B.L. No. 01-162.
• Sterilized all 3 strips.	Do not sterilize control strip.

2. GROWTH IS FOUND IN BOTH VIABILITY AND TEST STRIPS

Probable Causes	Corrections
• Load may be too large, too dense, or improperly loaded in chamber.	Size of packs should not exceed 12" x 12" x 20", weight should not exceed 12 pounds. Packs should rest on edge; all supplies arranged to present the least possible resistance to passage of steam and air through layers of load.
• Sterilizer may be malfunctioning.	Notify manufacturer.
• Media may not have been sterile when used.	Run negative control tubes to disprove this possibility.
• Contaminated during transfer to media.	Use only aseptic technic in laboratory.

3. GROWTH IS FOUND IN ONE TEST STRIP BUT NOT THE OTHER

Probable Causes	Corrections
• Contamination of one strip during transfer to media.	Use only aseptic technic in laboratory.
• Too short an exposure period.	Use correct exposure period for type of load.
• Sterilizer may be malfunctioning.	Notify manufacturer.

1. STICKY GASKETS

Probable Causes	Corrections
• Old gasket.	Replace.
• Door closed when not in use, steam in jacket.	Leave door ajar.
• Dirty door frame.	Clean.

2. STEAM LEAKAGE

Probable Causes	Corrections
• Worn gasket.	Replace.

Probable Causes	Corrections
• Door closed improperly.	Close properly (if problem continues, notify hospital maintenance).

3. CATCHES SLIP ON LOADING CARRIAGE

Probable Causes	Corrections
• Loose spring.	Adjust or replace.

Probable Causes	Corrections
• Carriage too high.	Lower carriage.

4. LOADING CAR "CREEPS" WHEN DOOR IS OPENED

Probable Cause	Correction
• Sterilizer not level.	Notify hospital maintenance.

5. CHAMBER DOOR WON'T OPEN

Probable Causes	Corrections
• Vacuum in chamber.	Turn controls off and wait for equalization of pressure.

Probable Causes	Corrections
• Door-lock clutch is jammed.	Press door-lock clutch release and/or notify hospital maintenance.
• Gasket sticking to door frame.	Notify hospital maintenance.